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Interim Guidelines for
• Dentistry

Workplace Prevention and Management of
Acquired Immunodeficiency Syndrome (AIDS)
and Human Immunodeficiency Virus Infections (HIV)

Manitoba
Health

WORKPLACE PREVENTION AND MANAGEMENT OF

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

AND

HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS (HIV)

INTERIM

GUIDELINES FOR

DENTISTRY

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PREFACE

The purpose of this series of infection control guidelines is to provide information on measures which should be taken to prevent the transmission of AIDS virus (HIV) infection in the community, in institutions and in other workplaces.

AIDS virus (HIV) infection is transmitted by the exchange of blood and/or body fluids; it is basically a sexually transmitted infection and modification of sexual practices is the single most important method of preventing infection.

In the workplace, handwashing and caution in the use and disposal of needles are the most important infection control procedures.

Most persons with AIDS virus (HIV) infection are asymptomatic and many are not aware that they are infected. For this reason, appropriate precautions must be taken for <u>all</u> persons at risk of being infected. In most situations the following guidelines are applicable to all persons - whether they are identified as being infected or not.

The titles available under the series of <u>Workplace Prevention and Management of Acquired Immunodeficiency Syndrome (AIDS) and Human Immunodeficiency Virus Infections (HIV)</u> are:

Guidelines for hospitals, laboratories, and pathologists
Guidelines for funeral directors
Guidelines for home care providers, and long term facilities
Guidelines for providers of prehospital emergency care and resuscitation training
Guidelines for dentistry
Guidelines for correctional and detentional facilities
Guidelines for schools and daycare centres
Guidelines for personal service workers.

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As the bibliography indicates, Canada Diseases Weekly Report (CDWR) and Morbidity Mortality Weekly Report (MMWR) recommendations are the basis for many of these guidelines.

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INTRODUCTION TO AIDS AND AIDS VIRUS (HIV) INFECTION

DEFINITION

Acquired Immunodeficiency Syndrome (AIDS) is a breakdown of the body's immune system - its natural defense against disease. Without this protection, a person is vulnerable to illnesses which a healthy immune system can prevent.

A person with AIDS fights an ongoing battle against many illnesses. Rare forms of pneumonia, skin cancer or brain infection may occur and are eventually fatal.

CAUSE

AIDS is caused by a virus - commonly called the Human Immunodeficiency Virus (HIV) - which attacks the body's immune system. Infection with this virus does not always lead to AIDS. Infected persons may have a mild illness or none at all. As yet, it is not known why some people become ill and others do not. The amount of virus, as well as infection by other viruses, may influence the development of AIDS.

SYMPTOMS

At present, the vast majority of persons with an AIDS virus (HIV) infection (approximately 70%) may feel completely well and have no symptoms. Some infected persons (approximately 25%) have some of the following symptoms: swelling of glands in the neck, armpits and groin, a thick white coating on the tongue, unexplained weight loss, persistent diarrhea, a harsh dry cough, tiredness, fever, or night sweats. These symptoms may be referred to as AIDS-related conditions (ARC). Only about five percent of persons presently infected with the AIDS virus (HIV) have the actual syndrome known as AIDS.

TRANSMISSION (Spread)

How the Virus is Spread

- The AIDS virus (HIV) has been shown to be spread from an infected person to an uninfected person in the following ways:
  - through sexual contact (penis/vagina, penis/rectum, mouth/rectum, mouth/genital)
  - through sharing needles used in injecting drugs,
  - through transfusion or injection of infectious blood or blood products; to help prevent this type of spread, all blood donations in Canada are now screened for evidence of AIDS virus (HIV) infection,
  - from an infected woman to her fetus or newly born baby.

- An individual can be infected with the virus that causes AIDS without having symptoms of AIDS or appearing ill. Infected individuals without symptoms can transmit the infection to others. Once infected, a person is presumed infected for life, but actual symptoms may not develop for many years.

- A single exposure to the AIDS virus (HIV) may result in infection.

How the Virus is NOT Spread

- There is no evidence that the virus is spread through casual social contact such as shaking hands, social kissing, coughing, sneezing, sharing swimming pools, bed linens, eating utensils, office equipment, or being next to or served by an infected person. There is no reason to avoid this type of contact with an infected person.

- It is not spread by the process of giving blood; new transfusion equipment is used for each donor.

- It is not spread by sexual intercourse between uninfected individuals who have maintained an exclusive sexual relationship.

RISK ACTIVITIES

1. Sexual activity with a number of different partners, particularly if they are anonymous.
2. Anal intercourse
3. Intravenous drug abuse.

GROUPS AT RISK

1. Homosexual and bisexual men
2. Intravenous drug abusers
3. Recipients of multiple blood or blood product transfusions prior to 1986
4. Children born to mothers infected with the AIDS virus (HIV)
5. Persons with multiple sex partners.
6. People who are sexually active with individuals who are or may be infected.

AIDS AND AIDS VIRUS (HIV) TESTING

At the present time, blood can routinely be tested only for signs of the virus. These signs are special blood components called antibodies which form in response to the virus. The blood test is available only at the request of a physician and should only be done after appropriate counselling has taken place.

Positive Antibody Test

If antibodies to the AIDS virus (HIV) are found in the blood, it means the person has been infected with this virus at some time. A positive test result does **NOT** mean that a person has AIDS or will get AIDS at some time in the future. It does **NOT** mean the person is immune to (protected from) the virus. It **DOES** indicate that the person has been exposed to the virus, is assumed to carry the virus and could spread it to others.

Negative Antibody Test

A negative test usually means that the person has not been infected with the AIDS virus (HIV).

TREATMENT

At this time there is no treatment which can repair the breakdown of the body's immune system. Treatments are available for many of the illnesses which develop because of the weakened immune system. However, AIDS is always fatal. Most patients die within three years of diagnosis.

PREVENTION

No vaccine is currently available. The only strategy to combat the spread of infection is to prevent the transmission of the virus from one person to another.

PUBLIC EDUCATION

GENERAL PUBLIC

Education of the general public is an essential component of the program to control AIDS and AIDS virus (HIV) infections. Knowledge of how the disease is spread and how to avoid infection should reduce much of the concern which exists in the community. At the same time, accurate information should motivate all individuals to realistically reduce their own risk of acquiring or transmitting this infection.

People infected with the virus may seem completely healthy and may not even know they have it. Although most persons in North America who are known to be infected are in groups at risk, anyone who is exposed can become infected. Therefore, it is prudent for everyone to take precautions to protect themselves from becoming infected. The following information and advice is appropriate for the general public:

- Infection through sexual contact can be avoided by abstaining from sexual activity. Sexually active persons can avoid the AIDS virus (HIV) infection by establishing a mutually exclusive relationship with an uninfected partner.

- Individuals who are sexually active should not have sex with many different people. The more partners one has, the greater the chances of having sex with an infected person.

- The use of condoms is strongly encouraged if there is any possibility that a sex partner has been exposed to or is infected with AIDS virus (HIV). A history of intravenous drug-use or of many sex partners increases the chance that a person may have been infected.

- Sharing needles and syringes should be avoided.

- Anal intercourse should be avoided. It is important to use a condom if one does have anal intercourse.

SCHOOLS

School boards and public health offices are encouraged to develop education programs to inform children, parents, and teachers about AIDS and AIDS virus (HIV) infections. Education about risk factors and risk reduction methods should be factual and non-judgmental.

SCHOOL AND COLLEGE AGED POPULATIONS

Education to these students should emphasize:

- One can virtually <u>eliminate</u> the risk of AIDS and AIDS virus (HIV) infections by saying no to sex and drugs.

- One can <u>reduce</u> the risk of AIDS by practicing responsible sexual behavior with a mutually exclusive partner and avoiding risk activities.

GROUPS AT RISK AND RISK ACTIVITIES

Persons in risk groups and persons who engage in risk activities should be informed about AIDS and AIDS virus (HIV) infections so they can take precautions to minimize their chances of acquiring or transmitting the infection.

The following advice is particularly appropriate for persons who are in known risk groups or who engage in risk activities:

- Use condoms during sexual activity. The proper use of condoms may prevent infection with the virus carried in semen and vaginal fluid.

- Do not have anal intercourse. It can cause sores or cuts in the rectum and the virus may get into the bloodstream through these breaks. If you do have anal intercourse, use a condom.

- Do not have oral sex if you have open sores or cuts in the mouth.

- Do not allow semen, blood, urine or feces to enter the body of a sexual partner.

- Infected women should use a reliable method of contraception to avoid pregnancy.

- Never share needles and syringes with anyone.

- Do not donate blood, organs or sperm.

THE WORKPLACE

It is essential that all individuals be knowledgeable about basic infection control practices and be encouraged to follow them. An educational effort directed to staff in all workplaces is an important aspect of preventing transmission of infections and reducing anxiety and misunderstanding about the infection. Although educational initiatives need to address communicable diseases in general, specific emphasis should be directed at AIDS and AIDS virus (HIV) infections. The goal of this education is to combat fear that is based on misinformation or lack of information and to minimize the risk of transmission of AIDS virus (HIV) by promoting good health practices. These include routine use of infection control precautions and eliminating risk behaviors. Staff also need to be provided with information regarding the signs and symptoms of AIDS virus (HIV) infections, the methods of transmission of the virus and preventive measures. This information should be presented in terms that are easily understood and should include literature in foreign languages if required.

GUIDELINES FOR DENTISTRY

In the workplace, dental health care workers (DHCW) are exposed to the blood and saliva of their patients and therefore may be exposed to a number of infections including AIDS virus (HIV).

DHCWs are at risk of exposure because dental treatments may involve cutting tissues, which often results in bleeding. Other factors that may promote the spread of infections are aerosolization of tiny water droplets and contamination in water supply lines.

Dental laboratory workers are also at increased risk due to contact with items such as intraoral devices and impression materials which may have not been disinfected.

The following infection control procedures should be used routinely to minimize the risk of transmitting AIDS virus (HIV) infection from patients to dental health care workers (DHCW), from patient to patient or from dental workers to the patient.

MEDICAL HISTORY

It is important to routinely obtain a thorough patient medical history. This should include information specifically about hepatitis, recurrent illnesses, unintentional weight loss, lymphadenopathy, oral infections or lesions.

If history of AIDS or AIDS virus (HIV) infection is identified, consultation with the patient's physician is indicated.

HANDWASHING

Hands must always be washed immediately following patient treatment (following removal of gloves), after touching instruments and other objects potentially contaminated by blood or saliva from other patients, and before leaving the operatory.

It is extremely important that DHCW avoid hand injuries during procedures. Should gloves become torn, cut or punctured, they must be removed immediately, hands be thoroughly washed and new gloves should be put on before completing the dental procedure.

DHCWs who have open lesions or active dermatitis should refrain from all direct patient care and from handling patient-care equipment until the condition is resolved.

GLOVES

Gloves must always be worn when touching blood, saliva, or mucous membranes.

Gloves must be worn by DHCWs when touching blood-soiled items, body fluids, or secretions, as well as surfaces contaminated with them. Gloves must be worn when examining all oral lesions.

Where possible, all work should be completed on one patient and the hands must be washed and regloved before performing procedures on another patient.

Repeated use of a single pair of gloves is not recommended. This is likely to produce defects in the glove material, which will diminish its value as an effective barrier.

NEEDLES AND SHARP INSTRUMENTS

Sharp items (needles, scalpel blades, and other sharp instruments) should be considered as potentially infective and must be handled with extreme care to prevent unintentional injuries.

Disposable syringes and needles, scalpel blades, and other sharp items must be placed into puncture-resistant containers located as close as practical to the area in which they were used.

To prevent needlestick injuries, disposable needles should not be recapped, purposefully bent or broken, removed from disposable syringes, or otherwise manipulated by hand after use.

Certain dental procedures may require multiple injections of anesthetic or other medications from a single syringe. It would be safer to place the unsheathed needle into a "sterile field" between injections rather than to recap the needle between injections. A new (sterile) syringe and a fresh solution should be used for each patient.

GOWNS

Gowns, laboratory coats, or uniforms must be worn when there is a possibility that clothing will be soiled with blood or other body fluids. If reusable gowns are worn, they may be washed, using a normal laundry cycle. Gowns should be changed at least daily or when visibly soiled with blood or other body fluids.

MASKS

Surgical masks and protective eyewear or chin-length plastic face shields must be worn when splashing or spattering of blood or other body fluids are anticipated.

INSTRUMENTS

Proper sterilization should be used routinely for all procedures. Periodic checks on the adequacy of sterilization equipment and procedures are indicated, e.g. spore test indicators and pressure/steam indicator devices.

After sterilization, instruments should be stored in sterile packs or pouches. Instruments stored uncovered in drawers, cabinets or elsewhere cannot be assumed to be sterile at subsequent use.

Surgical and other instruments that normally penetrate soft tissue and/or bone (e.g., forceps, scalpels, bone chisels, scalers, and surgical burs) should be sterilized after each use.

Instruments that are not intended to penetrate oral soft tissue or bone (e.g., amalgam condensers, plastic instruments, hand pieces and burs) but that may come into contact with oral tissues should also be sterilized after each use, if possible. If sterilization is not feasible, these instruments should receive high-level disinfection.

METHODS FOR HIGH-LEVEL DISINFECTION OR STERILIZATION

Instruments should be cleaned before high-level disinfection or sterilization. Cleaning may be accomplished by a thorough scrubbing with soap and water or a detergent, or by using a mechanical device (e.g., an ultrasonic cleaner).

Persons involved in cleaning and decontaminating instruments should wear heavy-duty rubber gloves to prevent hand injuries. Metal and heat-stable dental instruments should be routinely sterilized between uses by steam under pressure (autoclaving), dry heat, or gas sterilization.

Heat-sensitive instruments may require up to 10 hours exposure to a liquid chemical agent (e.g., glutaraldehyde). This should be followed by rinsing with sterile water. High-level disinfection may be accomplished by immersing items in boiling water for at least 10 minutes or using a disinfectant sterilant chemical (e.g. glutaraldehyde) for the exposure time recommended by the manufacturer. The instrument should then be wiped off with alcohol.

DECONTAMINATION OF ENVIRONMENTAL SURFACES

After the work has been completed, countertops and surfaces that may have become contaminated with blood or saliva should be wiped with absorbent towelling to remove any organic material and then disinfected

with a suitable chemical germicide. A bleach solution prepared fresh daily is an inexpensive and very effective germicide. Concentrations ranging from 5,000 ppm (a 1:10 dilution of household bleach) to 500 ppm (a 1:100 dilution) sodium hypochlorite are effective, depending on the amount of organic material (e.g., blood, mucus) present on the surface to be disinfected. Caution should be exercised, since sodium hypochlorite is corrosive to metals, especially aluminum.

DECONTAMINATION OF LABORATORY SUPPLIES AND MATERIALS

Blood and saliva should be thoroughly cleaned from laboratory supplies and materials that have been used in the mouth (e.g., impression materials, bite registration), especially before polishing and grinding intra-oral devices. Materials, impressions, and intra-oral appliances should be cleaned and disinfected before being handled, adjusted, or sent to a dental laboratory. These items should also be cleaned and disinfected when returned from the dental laboratory and before placement in the patient's mouth. Because of the many dental materials used intra-orally, DHCWs are advised to consult with manufacturers regarding the stability of specific materials relative to disinfection procedures. A chemical germicide that is registered as a "hospital disinfectant" and that has a label claim for mycobactericidal (e.g., tuberculocidal) activity is preferred, because mycobacteria represent one of the most resistant groups of microorganisms. Therefore, germicides that are effective against mycobacteria are also effective against other bacteria and viruses. Communication between a dental office and a dental laboratory with regard to handling and decontamination of supplies and materials is of the utmost importance.

HANDLING OF BIOPSY SPECIMENS

In general, each specimen should be put in a sturdy container with a secure lid to prevent leaking during transport and should be clearly labelled. Care should be taken when collecting specimens to avoid contaminating the outside of the container. All specimens requiring blood and body fluid precautions should be bagged and labelled accordingly.

DISPOSAL OF WASTE MATERIALS

All sharp items (especially needles), tissues, or blood should be considered potentially infective and should be handled and disposed of with special precautions.

Disposable needles, scalpels, or other sharp items should be placed intact into puncture-resistant containers before disposal.

Holding tanks or self-contained aspirator units should be disinfected with sodium hypochloride solution (diluted 1 in 100 or 1.5 in 100) for ten to thirty minutes before evacuating.

Other solid waste contaminated with blood or other body fluids should be placed in sealed, sturdy impervious bags to prevent leakage of the contained items. Such contained solid wastes can then be disposed of according to requirements established by local and provincial environmental regulatory agencies and published recommendations.

MANAGEMENT OF POSSIBLE WORKPLACE EXPOSURE TO AIDS VIRUS (HIV)

If a worker or a patient/client has a needle puncture or cut to the skin or mucous membrane (e.g., splash to the eye or mouth) exposure to blood or other body fluids, the source person should be assessed clinically and epidemiologically by a physician to determine the possibility of AIDS virus (HIV) infection.

If such infection may exist, the source person should be informed of the incident and requested to consent to blood testing for evidence of AIDS virus infection. If the source patient is found to be infected or declines testing, the person who was exposed to possible infection should be evaluated clinically and serologically for evidence of AIDS virus (HIV) infection as soon as possible. If the exposed person's first blood test is negative, he or she should be retested after a period of 6 weeks and again at 3, 6 and 12 month intervals to determine if transmission has occurred. If the source person continues to show a negative test and has no evidence of AIDS virus (HIV) infection, no further follow-up is necessary.

GLOSSARY

AIDS	Acquired Immunodeficiency Syndrome.
ARC	AIDS-related Complex.
HIV	Human Immunodeficiency Virus: the agent which causes AIDS; formerly known as Human T-Lymphotropic Virus III/ Lymphadenopathy Associated Virus (HTLV-III /LAV).
HCW	Health Care Worker
HBV	Hepatitis B Virus
PSW	Personal Service Worker
Antiseptic	a chemical having the ability to destroy potentially infective micro-organisms and which can be used safely on living tissues.
Bleach Solution	the most commonly recommended disinfectant in these guidelines is bleach solution (i.e. a 0.5% sodium hypochlorite solution which can be prepared by mixing household chlorine bleach - (5.25%) one part bleach to nine parts water). It must be prepared fresh daily. This solution is corrosive and must be used with caution on metal surfaces.
Cleaning	Scrubbing and washing, with hot water, soap or detergent to remove infectious agents and/or organic matter from surfaces.
Disinfection	the use of germicidal chemical agents to destroy infectious agents.
Sterilization	the use of a physical process or chemical agents to eliminate all viable microorganisms. Steam and gas autoclaving and dry heat ovens are the most common methods.

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